

Claims:

1. Dispensing apparatus (2) for use in dispensing a fluid lining material onto one or more interior wall surfaces of a conduit, said dispensing apparatus (2) including at least one reservoir for the containment of at least one fluid, dispensing outlet means communicating with said at least one reservoir for dispensing fluid therefrom and a rotational head member for directing the dispensed fluid from the dispensing outlet means (6) in a required direction onto the walls of said conduit, said rotational head member including at least one recess or cavity portion therein into which the dispensing outlet means dispenses the fluid and at least one opening communicating with said recess or cavity portion through which the fluid travels to be dispensed from said head member, said opening of said rotational head member facing the dispensing apparatus and said rotational head member capable of undergoing reciprocal motion relative to a further part of the apparatus in use, characterised in that at least one directional member is provided in the at least one recess portion (24) substantially opposite said outlet means, such that fluid being dispensed from said outlet means impacts an outer surface of said directional member in use.
2. Dispensing apparatus according to claim 1 characterised in that the at least one directional member is in the form of a truncated cone (34).
3. Dispensing apparatus according to claim 1 characterised in that at least one shaft (10) or arm member connects the rotational head member (8) to the apparatus.

4. Dispensing apparatus according to claims 2 and 3 characterised in that the arm or shaft member is connected to or is located through the truncated portion of the cone (34).
5. Dispensing apparatus according to claim 1 characterised in that the side walls (38) of the directional member diverge outwardly in a direction away from the dispensing outlet means.
6. Dispensing apparatus according to claim 1 characterised in that side walls of the recess portion diverge outwardly in a direction opposite to the side walls of the directional member.
7. Dispensing apparatus according to claim 1 characterised in that the outer side walls (38) of the directional member are substantially planar or straight.
8. Dispensing apparatus according to claim 1 characterised in that two or more fluids are mixed in the dispensing outlet means (6) prior to being dispensed onto said directional member.
9. Dispensing apparatus according to claim 1 characterised in that the directional member is integrally formed with said head member to provide a substantially continuous surface along which the fluid flows from the outer side walls of the directional member to the inner side walls of the recessed portion (24).
10. Dispensing apparatus according to claim 1 characterised in that the rotational head member (8) is in the form of a cup with side walls, a first closed end (26)

and a second open end (30), the at least one recess portion (24) being defined between the side walls, the first closed end and the second open end.

11. Dispensing apparatus according to claim 10 characterised in that the width of the side walls of the head member (8) is greater adjacent said first closed end (26) relative to a free end (40) adjacent the second open end (30).
12. Dispensing apparatus according to claim 1 characterised in that the fluid is dispensed from the apparatus during a single pass of the apparatus (2) through the conduit.
13. Dispensing apparatus according to claim 1 characterised in that the reciprocal motion is in a direction longitudinally of the apparatus (2).
14. Dispensing apparatus according to claim 1 characterised in that the apparatus is pulled through a conduit in use manually or via manually activated means.
15. Dispensing apparatus according to claim 1 characterised in that drive means (12) are provided to drive movement of the apparatus through a conduit in use.
16. Dispensing apparatus according to claim 1 characterised in that means to allow reciprocation of the rotational head member (8) includes any or any combination of one or more hydraulic pistons, pneumatic pistons, ball reverser or mechanical components such as a crank shaft.

17. Dispensing apparatus according to claim 1 characterised in that the dispensing outlet means (6) is in the form of a housing having at least two inlets (14, 16), an outlet (20) and at least one mixing compartment (18) located between said inlets and outlet.
18. Dispensing apparatus according to claim 17 characterised in that the dimensions of the mixing compartment (18) and/or outlet (20) are less than the dimensions of the at least two inlets (14, 16).
19. Dispensing apparatus according to claim 1 characterised in that the dispensing outlet means (6) has at least one channel provided with closure means at an open end thereof.
20. Dispensing apparatus according to any preceding claim characterised in that the fluid dispensed from said apparatus has a curing time which is only slightly greater than the time taken for the component fluids to be mixed, dispensed onto the rotational head member and deflected therefrom but is less than the time taken for the rotational head member to complete a single reciprocating movement.
21. Dispensing apparatus according to claim 1 characterised in that the fluid being dispensed includes an amine and an aromatic isocyanate.
22. Dispensing apparatus according to claim 1 characterised in that the fluid being dispensed from the apparatus has a curing time of less than 10 seconds.

23. Dispensing apparatus according to claim 1 characterised in that the fluid being dispensed from the apparatus has a curing time of approximately 3 seconds.
24. Dispensing apparatus according to claim 1 characterised in that control means are provided on or associated with the apparatus to control any or any combination of the rotational speed of the rotational head member, reciprocating speed of the rotational head member, the temperature of the one or more fluids and/or the pressure of the fluid delivery of the one or more fluids in the apparatus.
25. Dispensing apparatus according to claim 1 characterised in that the dispensing outlet means (6) is a spaced distance apart from the rotational head member (8) such that dispensed fluid has to move through free space prior to impacting a portion of the head member.
26. Dispensing apparatus according to claim 1 characterised in that drive means (12) are provided to drive rotation of the head member (8).
27. Dispensing apparatus according to claim 26 characterised in that the drive means (12) for rotating the head member (8) also drives the reciprocating motion of the head member (8) relative to a further portion of the apparatus.
28. Dispensing apparatus according to claim 26 characterised in that the drive means for rotating the head member are separate to the drive means for driving reciprocation of the head member.

29. Dispensing apparatus according to claim 1 characterised in that the rotational head member (8) is rotated at approximately 15,000 RPM.
30. Dispensing apparatus according to claim 1 characterised in that the directional member extends beyond the opening of the head member (8).
31. A head member (8) for use with fluid dispensing apparatus according to any preceding claim.
32. Dispensing outlet means (6) for use with fluid dispensing apparatus according to any preceding claim.
33. A method of applying a fluid onto a surface of a conduit using dispensing apparatus (2), said method including the steps of mixing two or more component fluids in dispensing outlet means (6), dispensing said mixed fluids in at least one recess portion of a rotational head member and deflecting said mixed fluids through at least one opening defined in said rotational head member onto the conduit surface, said at least one opening communicating with said recess portion, the opening of said rotational head member facing the dispensing apparatus and the rotational head member caused to undergo reciprocal motion relative to a further part of the apparatus in use, characterised in that at least one directional member is provided in the at least one recess portion (24) substantially opposite said outlet means, such that fluid being dispensed from said outlet means impacts an outer surface of said directional member in use.